

Sub. a1 >

1. A method of controlling a computer game, comprising the steps of:
 - 2 imaging a sequence of scenes including the head of a user of the computer; and
 - comparing visual characteristics from scene to scene center to determine movement of
 - 4 the user's head within the scene; and
 - controlling the game in accordance with the movements.
2. The method of claim 1, wherein the visual characteristics include color, shape
2 or location.
3. The method of claim 1, wherein the visual characteristics include a
2 combination of static and dynamic characteristics.
4. The method of claim 3, further including the step of modeling of the dynamic
2 characteristics to yield an estimate of head position.
5. The method of claim 1, further including the step of initiating the head
2 tracking through a graphical user interface.
6. The method of claim 5, wherein the graphical user interface provides a
2 bounding box displayed on the screen to assist in targeting the user's head.

7. The method of claim 2, further enabling a match in color despite differences
2 arising from lighting and shadows.
8. The method of claim 2, further enabling a match in color within a threshold of
2 hue.
9. The method of claim 1, wherein step of comparing the visual characteristics
2 includes a comparison of pixels from scene to scene.
10. The method of claim 1, further including the step of determining if the user's
2 head has moved outside of the scene.
11. The method of claim 1, wherein:
2 the visual characteristic is color; and
further including the step of finding a weighted average of color to compute the loc
4 based upon action of the user's head based upon color alone.
12. The method of claim 1, further including the step of segmented a region
2 defined by a predetermined closeness of color as an estimate of target shape.

CYB-07003/03
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13. The method of claim 1, further including the step of continuing to track the
2 user's head when moving in front of or behind a similarly colored object in the scene.
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